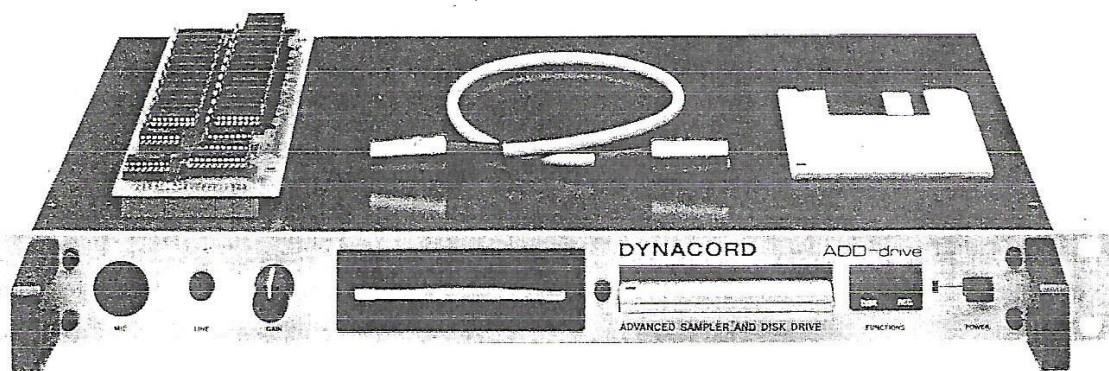


# DYNACORD

# Bedienungsanleitung Operating Manual Mode d'emploi



# ADD - drive

## ADVANCED SAMPLER AND DISK DRIVE

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## 1. Brief system description

The ADD-drive is a disk drive / audio sampling unit designed to work with the DYNACORD ADD-one drum machine. It is housed in a single height rack enclosure (19" standard) with its own power supply and connects to the ADD-one with a 7-pin DIN plug provided.

The drive is used for storing and retrieving ADD-one programs and sounds. Standard 3.5" DS (double-sided), DD (double-density) micro floppy disks are used. A single disk can hold 128 ADD-one programs, program chain, global parameters and up to 768 k bytes of sound sample data. Saving data to disk is generally done by saving all data in a single operation. Programs, sounds, the program chain and global data, may be loaded into the ADD-one all together or separately.

The ADD-RAM board provided must be installed in the ADD-one in order to load sounds from the disk.

The ADD-RAM board replaces any expansion EPROM memory boards (PC-2 and EPSC's) that may be installed in the ADD-one. The sounds in the EPROM extension (before the PC-2 boards are replaced by the RAM board) can be stored on a single disk even at maximum configuration level. The basic set, on the other hand, always remains in the ADD-one. The software prevents the sounds in the basic set from being stored on disk (to save memory space on the disk).

In addition to the studio produced DYNACORD sound disks, user sampling is also possible using the audio inputs of the ADD-drive. Both line and microphone inputs are provided along with a level control. A Canon type XLR connector is an electrical, balanced input for microphone connection and the 1/4" phone jack is provided for unbalanced input signals. (Plugging a connector into the line input will automatically disable the XLR connector.) Recording is done at one of two possible sampling rates: 50 kHz or 25 kHz. The 50 kHz sampling rate will result in an extremely high frequency bandwidth, whereas the 25 kHz rate will allow recording longer or more samples as the memory requirement is halved. Other programmable parameters for recording include input gain (X1 or X5), preemphasis, compression, noise gate and record threshold level. The record threshold level is used to allow automatic triggering of the sampling process when the input signal reaches the preselected threshold level.

Several sound editing functions are also provided: Sounds in RAM may be selectively erased, or start, loop and end points may be freely varied. Looping will occur between the loop and end point when the two points are different.

Sounds may be named with a 3-character name, a 3-digit number and a 10-character description. After recording, all new sounds automatically start with the description "NEW XXX NEW SAMPLE". After you decide to keep a new sample, its name should be changed to something more descriptive to avoid confusion. Other parameters include: Variable start point, basic sample rate, filter frequency, de-emphasis control, envelope gate time, envelope release time and dynamic trigger levels for multi-samples.



One of the little known features of the ADD-one is the capability of being able to play more than one sound on one channel. This facility is known as "multi-sampling" because it is treated as one sound with a single name, but it has more than one actual sample associated with it. Multi-samples may use from two to eight different samples. The sample which is played is determined by the dynamic level of the input trigger. Allocation of these dynamic levels to one of the sounds may be edited. The basic sound EPROM's on the main processor board must be complete, occupying all 8 sockets. ADD-one conversion is described in Section 2.

Another useful feature is the "Variable Start Amount" (= VSA). This allows changing the playback starting point of a sound depending on the trigger level. When VSA is negative, the start point of the sound will move back as the level of the trigger increases, causing more of the attack of the sound to play, i.e. the attack will sound harder. A positive VSA will do the opposite. As soon as the trigger level increases, the start point will move towards the end of the sound, causing the attack to sound softer as the attack phase is no longer present.

#### ADD - SOUND DISKS

DISK	ORDER NO.	SOUNDS
001	111421	DRUMS PERCUSSION 1 (--> EPSC 001-006)
002	111422	CHURCH BELLS: very small --> x-large bells
003	111423	ANIMAL FARM: All around the farm
004	111424	INDIAN PERCUSSION: A lot of typical sounds
005	111425	LATIN PERCUSSION: Come to the carnaval
006	111426	AFRICAN PERCUSSION: Exciting black power
007	111427	CANNON CARS: Car and crash effects
008	111428	DRUMS EFFECTS: Different bass and snare drum
009	111429	CYMALES'S"3000": Ride, crash and hihat cymbals
010	111430	SPECIAL EFFECTS: Baby, what a big surprise..

We would be pleased to receive your own sounds. Should we be interested in publishing any of them we will get in touch with you and you can expect a premium!



### 1.1 ADD-one configuration

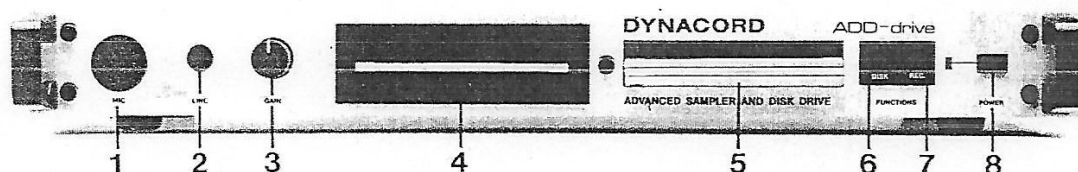
The ADD-one must have the latest software version in order to work correctly with the ADD-drive (version 2.20 or higher). Also, the RAM expansion board must be installed in the ADD-one (replaces any PC-2 EPROM expansion boards). The basic sound EPROM's on the main processor board must be complete, occupying all 8 sockets. ADD-one conversion is described in Section 2.

### 1.2 Precautions

The ADD-drive must be mounted on a level surface for operation. The best position is on the ADD-one. Heavy vibration and shock must be avoided at all times to protect the delicate disk drive mechanism. Disks must be handled with care. Always keep disks in a cool, dry, clean environment. Air-borne dust and cigarette smoke will shorten their useful life. Disks should always be kept away from strong magnetic fields. Do not open the sliding shutter on the disk at any time. Insert the disk into the drive with the label side up and again and the disk will be ejected. Never press the ejector button while the red light on the drive is illuminated! Eject the disk in the drive before turning the power on or off and never leave a disk in the drive for any extended period of time.

### 1.3 Description of the control elements

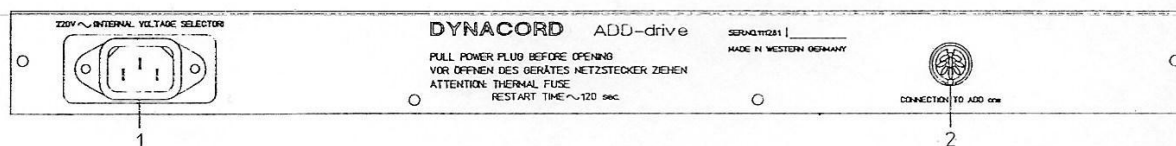
#### FRONT PANEL



- 1 - XLR connector for balanced input signals. Maximum sensitivity is 2.5 mVeff
- 2 - 1/4 inch jack for asymmetrical input signals. Maximum sensitivity is 80 mVeff.

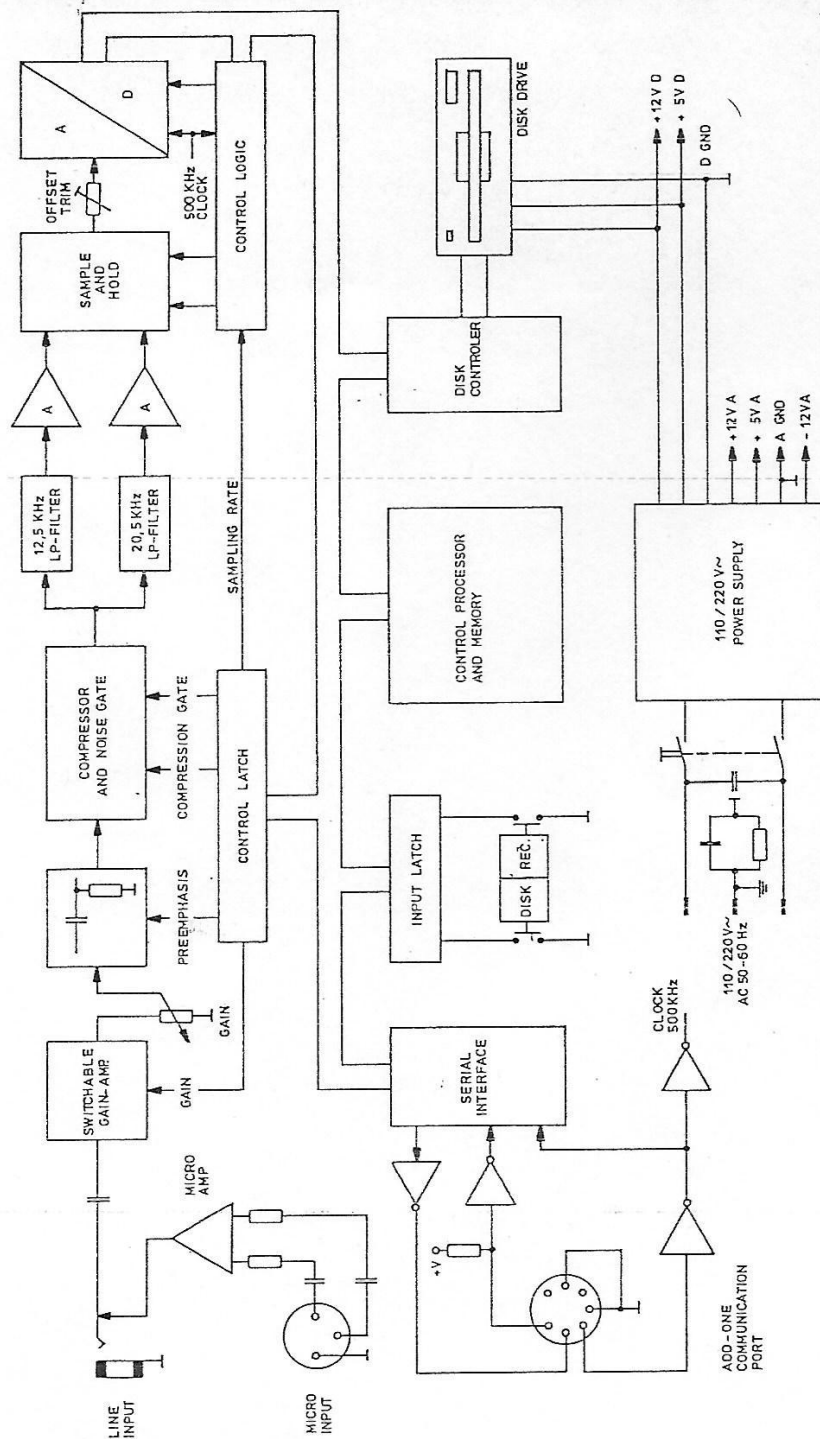
- 3 - Control for input signal attenuation. The correct setting checked by the VU meter on the ADD-one LCD display.
- 4 - Disk drive for 3.5 inch disk, double sided, double density. The red light indicates that the drive motor is turning. The disk can be ejected by pressing the ejector button.
- 5 - Space for a maximum of 5 disks.
- 6 - Key for calling disk operations (disk pages).
- 7 - Key for calling the record and edit functions (REC pages).
- 8 - ON/OFF switch with control light.

## REAR PANEL



- 1 - Mains connector. Remove cover to select mains voltage 110/220 V (see appendix).  
Caution! The unit is fitted with a thermal fuse which automatically re-enables after responding.
- 2 - 7-pin DIN connector for the ADD-one. All data are transferred to this line serially at 500 kbaud.  
Caution! The ADD-drive is electrically connected with the ADD-one via the circuit chassis.

## 1.4 Block circuit diagram





## 2. ADD-one conversion

In order to enable the ADD-drive, the ADD-one must have the correct software installed. So, first check your software: The software number installed in the ADD-one will appear on the display after pressing the "CODE" key five times. If your version is not 2.20 (or higher) - the cassette data format is still 1.00 - you must exchange 2 software EPROM's. This new software for the ADD-one is available through the trade. Instructions for changing the EPROM's come with the retrofit kit.

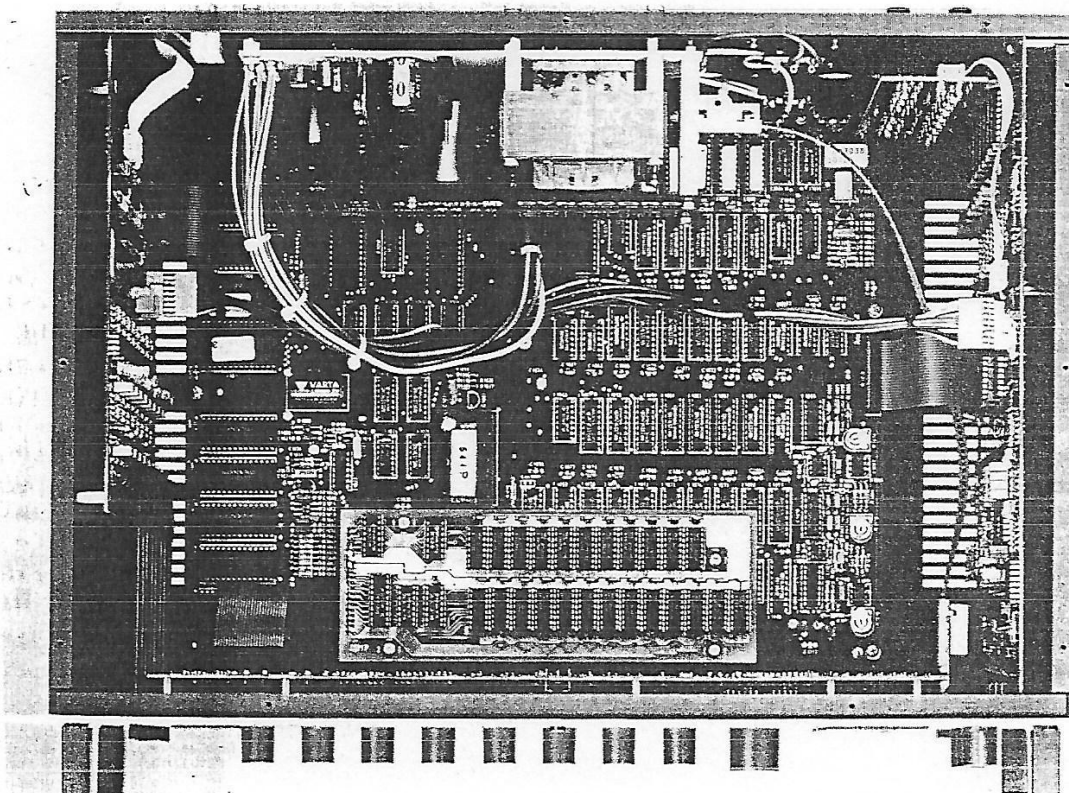
The ADD-one comes complete with a short cable with 7-pin DIN plug (ADK 05), RAM board and a demo disk. Before you use the ADD-drive you should make sure that have blank disks (3.5" DS/DD) available to enable you to store any sounds sampled yourself.

Before you fit the RAM board into the ADD-one, you can save all your EPSC's (EPROM sound expansions) to a blank disk in a single operation "Save All Data To Disk".

Installation of the RAM board into the ADD-one.

**CAUTION:** Disconnect mains plug before opening unit!

Unscrew the ADD-one cover. The expansion boards (PC 2) with EPSC's must be completely removed if already fitted. The basic EPROM set (8 EPROM's) on the main board must be complete. Now fit your RAM board into the plug connector and screw it firmly in position by means of the 4 screws. (Figure with RAM board installed.)



The ADD-one can now be closed again and connected to the ADD-drive. First switch on the ADD-one and then the drive and load all demo sounds into the ADD-one using "LOAD All Samples" (disk page 3). The demo disk has the main purpose of locating any damage which may have been caused during transport. This disk was produced at DYNACORD with your drive when it was correctly adjusted. If maladjusted as a result of heavy vibration or shock, you can still work with the drive in the normal way as long as you only use your own disks. However, if you want to use sound disks from other ADD-drive owners or DYNACORD Preset Disks, read errors may be expected.

### 3. Practical examples

Once you have installed the RAM expansion board and, if necessary, the new software into the ADD-one and both units are connected with the ADK 0.5 cable provided, first switch on the ADD-one and then the ADD-drive.

#### 3.1 Loading demo sounds

Insert the demo disk into the drive. Press the "DISK" key on the ADD-drive to activate the disk operations and the first function page will appear on the ADD-one display. Select disk page 3 using the ">>" cursor key on the ADD-one. This key can be used to load all sounds from disk into the ADD-one. Pressing the "STORE" key twice will activate the drive (red lamp illuminated) and all sounds will be loaded into the RAM expansion board. Using the ADD-one "routing funktion" it is now possible to select the sounds and assign them to an output channel.

Loading the demo program 127 filed by DYNACORD on the disk is another possibility. Now press the ">>" cursor key again. Using encoder 4 on disk page 4 now retrieve program 127 from the disk and assign it with encoder 8 to an unoccupied program location in the ADD-one. (The memory protect switch on the rear of the ADD-one must be set to the "OFF" position). After pressing the "STORE" key and activating the program, you can now play the sounds back using the test keys.

#### 3.2 Sound recording

The recording of a snare is used here by way of example: Connect a good make of dynamic microphone to the XLR connector. (If you loop the signal to be recorded through a mixer and have connected ADD-one output signal to the same mixer, noise may be produced as the ADD-drive is connected with the ADD-one via the circuit chassis.) Press the "REC" key to select the record mode. If you are not sure whether you have sufficient memory space for a recording, turn to sampling page 4 by pressing the ">>" key 3 times. Then return to sampling page 1 and check that modulation is correct by making a couple of test beats on the snare. If the meter bar of the display just touches the "S" of "Sampling", the signal has the correct modulation. If the control on the ADD-drive is already fully turned up, it is possible on sampling page 2 to increase gain by a factor of 5. Compression should be disabled when adjusting the record level.

Use encoder 1 to set the record trigger level and recording will start automatically when the meter bar exceeds the pointer. If recording is to be started in the manual mode, the pointer must be positioned at the far left of the display.

Press the ">>" key select sampling page 2. As a snare is to be recorded, i.e. a dynamic sound with a major difference between attack and final beats, it is recommended to enable the compression capability. If you are recording in a noisy environment, you can also activate the noise "gate". However, the final rustle of the snare floor will also be clipped as the gate cuts off below a specific input voltage. The preemphasis is used to suppress high-frequency noise elements in the signal. This is extremely useful for tom or bass drum sounds. You need not enable the preemphasis for the snare since its floor produces a noisy spectrum anyway.

Press the ">>" key to select sampling page 3 which is used to set the sampling frequency and recording duration. For sounds rich in hi's, which also applies to the snare, a frequency of 50 kHz is recommended (corresponds to a signal bandwidth of over 20 kHz). Select approx. one sec. or 25 k bytes of memory as the recording duration. You can always shorten the unused memory later using the edit pages. On recording, it is always important to specify that the memory space is divided up into fixed 32 k blocks. With an empty memory, this would enable a maximum of 24 recordings. Only when saving to disk will the ADD-one arrange all recordings and save them consecutively to disk.

#### CAUTION: Important Note

It must be noted that a so-called "header" belongs to each sound stored (it contains data on sound start, end, sampling frequency, etc.). So, if you select a memory area of 32k bytes for a recording, the amount of memory required by the header will cause the header to go into the next 32k byte block and thus - without you being able to visually recognise this on the display - take up 64k bytes of memory for the recording. However, only these 32k bytes are actually loaded to disk. The same applies when the recording is loaded back into the memory, plus a couple of bytes for the header.

The ADD-one uses sampling page 4 (press the ">>" key again) to show you how much unused memory space is still available. Using encoder 5 it is also possible to record up to 8 different multisamples. The next sampling page prepares the actual recording. If you now press the "STORE/YES" key, the ADD will be activated. Now, for example, start to strike the snare to be recorded. If the selected threshold is exceeded, all 8 trigger LED's will illuminate for the duration of the recording. The ADD-one will automatically assign the name NEW 001 to this recording provided it is your first recording in RAM. The recording can be heard directly afterwards by pressing test key 1 on the ADD-one. We now recommend making several recordings with different parameter settings and then playing them back immediately. In this way, you will gain experience as to the acoustic effects of different settings.



### 3.3 Editing

Now take the recording you like best and assign it to an output channel using the routing pages of the ADD-one. This enables you at any time to immediately check all changes when editing sounds.

Press the "REC" key twice on the AD-drive to go to the first edit page. This is where you select the sound to be edited by means of encoder 1 or 2.

Now press the ">>" key again on the ADD-one. On edit page 2 you now have the possibility, for example, of renaming a recorded snare. Using encoder 1, select a character and with encoder 3 move the cursor arrow to the displayed character you want to change.

#### CAUTION Note:

When allocating the family name, ensure that you do not collide with the name given by DYNACORD. It is possible that you will not be able to load a sound from disk to RAM if another sound is already resident with the same name. Use, for example, 2 lower-case letter in the family name and the problem is solved (e.g. Per or Sna).

Edit page 3 enables you to change the sound range and sound end by "shifting" the start and stop addresses. In addition, you can also from a loop-sound by changing the loop address. You will soon realise that this feature is little suited to a snare sound. The VSA (Variable Start Amount = start address dependent on dynamic level) however is extremely useful for a snare. For this purpose, connect a pad and try out various VSA settings. You will hear how the intensity and sharpness of the attack noise varies with beat strength as the case of a natural instrument.

Edit page 4 shows you the basic setting of various parameters as filed in the sound header. For instance, if you have selected a sampling rate of 25 kHz for a recording, the value "104" will appear under "RATE". If you do not like the pitch of the snare you have recorded, you are given the opportunity to tune it afterwards. In the ADD-one parameters, this preselected value will then always be given as "PITCH" = 00. The same also applies to the other parameters, such as "FILTER" and "REL" (= duration). "EMPHASIS" and "GATE" are not accessible in the ADD-one parameter set and should therefore be defined once and for all on this page.

"GATE" is used to operate a sustain function with a constant preselected value of 028. This parameter is extremely useful if you use sustained sounds, or looped sounds. Play about with these parameters to get the feeling for them and the way they can alter the acoustic effect, for example, of your snare sound or a cymbal, etc. Then adjust the parameters to your taste and store all changes by pressing the "STORE/YES" key.

### 3.4 Erasing

In order not to lose the sound when switching the ADD-one off, you must first save all sounds you have recorded to disk. You may also have sounds in the RAM which you feel are not worth keeping on disk. If you are still on the edit pages, you can select the erase functions by pressing the "REC." key a further time. Use encoder 4 to select the sound to be erased and delete it from the RAM of the ADD-one by pressing the "STORE/YES" key.

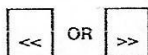
### 3.5 Saving


To save your newly recorded sound to disk, press the "DISK" key and you will gain access to all disk operations (disk page). Now press the ">>" key (7 times) until disk page 8 appears. Insert a new disk into the drive and initiate the loading process by pressing "STORE/YES". First, the ADD-drive will format the entire disk, i.e. divide it up into various memory sections. Only then will all program and sound data be stored. After removing the disk, the write-protect shutter at the bottom left-hand corner of the disk should be opened.

### 3.6 Operation summary



## DISK AND SAMPLING OPERATIONS


SELECT PAGES  
WITH ADD-one CURSORKEYS



 DISK PAGES

- P 1: LOAD ALL DATA FROM DISK INTO ADD-one
- P 2: LOAD ONE SAMPLE FROM DISK (use encoder 1)
- P 3: LOAD ALL SAMPLES FROM DISK
- P 4: LOAD ONE PROGRAM FROM DISK (use encoder 1)
- P 5: LOAD ALL PROGRAMS FROM DISK
- P 6: LOAD GLOBAL DATA FROM DISK
- P 7: LOAD PROGRAM CHAIN FROM DISK
- P 8: SAVE ALL DATA TO DISK
- P 9: VERIFY DISK DATA
- P10: FORMAT DISK


 AND  MIDI SAMPLE DUMP PAGES

1x  SAMPLING PAGES

- P 1: SET THRESHOLD (use encoder 1)
- P 2: SET RECORDING PARAMETERS
- P 3: SET SAMPLE RATE AND SAMPLING TIME
- P 4: SELECT MULTISAMPLES (use encoder 5)
- P 5: PREPARE TO RECORD

2x  SAMPLE EDIT PAGES

- P 1: SELECT SOUND TO EDIT (use encoder 1 and 2)
- P 2: EDIT SOUND NAME (use encoder 1 and 3)
- P 3: EDIT SAMPLE IN SOUND MEMORY
- P 4: EDIT SOUND PARAMETERS
- P 5: SET DYNAMIC SWITCHING LEVELS FOR MULTISAMPLES

3x  ERASE PAGES

- P 1: ERASE ONE SOUNDSAMPLE (use encoder 1)
- P 2: ERASE ALL SAMPLES IN RAM

#### 4. Operation of the ADD-drive

All disk operations are accessed using the 2 keys "DISK" and "REC.". The pages are selected by means of the cursor keys ">>" and "<<" on ADD-one.

##### 4.1 Disk function

In several of the following functions, after pressing "YES", the following warning will appear on the display:

THIS FUNCTION WILL ERASE ALL SAMPLE RAM

Press "YES" a second time to begin execution of the function. To abort the function, press any other key.

##### 4.1.1 Load all data from disk into the ADD-one

DISK

press -----> disk page 1

The display will read:

LOAD ALL DATA FROM DISK INTO ADD-ONE  
ARE YOU SURE ?     DISK PAGE 1

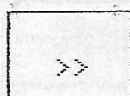
Press "YES" to load all data on the disk into the ADD-one. This data includes programs 0 to 127, global data (tracking generators and audio trigger settings, MIDI basic channel and mode), program chain data, and all sounds.

Any sounds that are in RAM before the loading process is commenced will be erased. The same applies to programs.

CAUTION: In order to load program data, the "memory protect" switch on the ADD-one must be set to the "OFF" position.



## 4.1.2 Loading a sample from disk



press -----&gt; disk page 2

The display will read:

```
LOAD SAMPLE # --- FROM DISK (   ) DISK
-----: ARE YOU SURE? PAGE2
```

This page will let you scan through the names of all sounds stored on the disk and load selected sounds into the ADD-one individually. When the first page is selected, no sound name will appear on the display. Turn the first encoder clockwise to view the name of the first name on the disk.

For example:

```
LOAD SAMPLE # 001 FROM DISK (017K) DISK
BDR 015 AMB.BASS22: ARE YOU SURE? PAGE2
```

Continue turning the encoder to see any other names of sounds on the disk. If there are many sounds on the disk, there will be a pause as additional directory information is loaded from the disk. The size of the sound is also displayed in parentheses. This allows an estimation of remaining memory space if several sounds are to be loaded individually.

When you have selected a sound, it can be loaded by pressing "YES". If another sound of the same name is already in the ADD memory, an error message will be displayed. If there is enough unused memory available for the sound, it will be loaded and automatically assigned to channel 1 in the ADD-one.

**CAUTION:**

In many cases, difficulties may be encountered if the sound memory is full and a sound is to be replaced by another by erasing the unwanted sound. If, for example, a snare taking up 32 k bytes of memory is erased and an attempt is then made to load another snare requiring the same 32 k bytes of memory, the ADD-one will display that no memory is available. There are two reasons for this:

- a) As the RAM is organised in blocks, a minimum of 32 k of unused memory must be available.
- b) Sound header and actual sound are stored separately into disk, i.e... the headers of all sounds are grouped together at the beginning of the memory followed by the actual sound data. If a sound is now erased and a new sound loaded, the ADD-one must load the header and sound data in one block into the resultant unused sound memory area.

As the new header may be larger than the old one, it must not be loaded into the gap produced by the old header. There are however two possibilities of storing an additional sound: You can erase a very short sound in order to obtain more than 32 k bytes of unused memory space or you can load the entire memory content back into disk. In this case, the memory will be reorganised, i.e. more memory space will be available when reloading into the ADD-one.

#### 4.1.3 Load all samples from disk

press -----> disk page 3

The display will read:

```
LOAD ALL SAMPLES FROM DISK
ARE YOU SURE?      DISK PAGE 3
```

Press "YES" to load all sounds on the disk into the ADD-one. This will erase all sounds currently in RAM.

#### 4.1.4 Load one program from disk

press -----> disk page 4

The display will read:

```
LOAD ONE PROGRAM FROM DISK      DISK
LOAD PROGRAM --- TO PROGRAM --- PAGE 4
```

Individual programs may be loaded from disk to any program location. Use encoder 4 to select a program and use encoder 8 to assign it to a specific program location. The newly loaded program will not become active until it is selected and confirmed by pressing "GO".

#### 4.1.5 Load all programs from disk

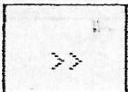
press -----> disk page 5

The display will read:

```
LOAD ALL PROGRAMS FROM DISK
ARE YOU SURE ?      DISK PAGE 5
```

Press "YES" to load all 128 programs into the ADD-one, replacing all current programs. The program currently selected will remain active until you press "GO". Sounds not available will be replaced by sounds in the basic set.

#### 4.1.6 Load all global data from disk

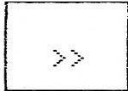
 press -----> disk page 6

The display will read:

LOAD GLOBAL DATA FROM DISK  
ARE YOU SURE? DISK PAGE 6

Press "YES" to load all global data from disk into the ADD-one. Global data includes: All "trackings"; the "AUDIO TROGGER ON" setting; MIDI presets such as MIDI CHANNEL, OMNI ON/OFF, PROGRAM CHANGE ON/OFF and MIDI BASIC CHANNEL.

#### 4.1.7 Load program chains from disk

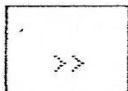
 press -----> disk page 7

The display will read:

LOAD PROGRAM CHAIN FROM DISK  
ARE YOU SURE? DISK PAGE 7

Press "YES" to load all 128 steps of the program chain into the ADD-one.

#### 4.1.8 Save all ADD-one data to disk

 press -----> disk page 8

The display will read:

SAVE ALL DATA TO DISK  
ARE YOU SURE? DISK PAGE 8

Press "YES" to write all sounds, programs, global data and the program chain in the ADD-one into disk. If the disk is not already formatted or not recognised as an ADD-one disk, it will be formatted automatically before the data is saved. It is possible to save all sounds in the RAM expansion as well as all sounds of the EPSC's. Sounds in the basic EPROM set cannot be transferred. Any data previously saved on the disk will be erased by this operation. Disks can be write-protected against accidental erasure.



## 4.1.9 Verify disk data

>> press -----> disk page 9

The display will read:

VERIFY DISK DATA  
ARE YOU SURE?      DISK PAGE 9

Press "YES" to verify the integrity of the data on disk. Each time data is written into a disk, it is recommended to perform the verify run to ensure that the disk content corresponds to the actual operating status of the ADD-one. This function is not a compare function but operates with check bits stored on the disk. This test can be performed on any disk at any time without it being necessary to retrieve data from the ADD-one for comparison. This operation takes about 1 minute.

## 4.1.10 Formatting the disk

>> press -----> disk page 10

The display will read:

FORMAT DISK: DATA ON DISK WILL BE ERASED  
ARE YOU SURE?      DISK PAGE 10

A new disk must be formatted before saving any data on it. The "save all data" function (disk page 8) will automatically format a disk if it detects that the disk is not already in ADD-one format. Since formatting a disk takes about 1 minute, the "save all data" process will take this much longer. Therefore, it is recommended to format disks first so that you have them ready for quickly saving data at a later time.

The format function will erase all data on a disk. If you are not sure of the contents of a disk to be erased, you should first scan through the directory of sounds using disk page 2.

Each new disk is assigned a number when it is formatted, as long as the battery powered memory of the ADD-one remains intact (the lithium battery is designed for a useful life of 10 years); the number assigned to each newly formatted disk will be automatically incremented by one. (The automatic increment feature can be disabled using a service routine.) All disks formatted with the ADD-drive will retain their original number unless the disk is damaged, re-formatted by another system or ejected during the formatted process.

## 4.2 Sampling functions

The following is a description of the edit pages of the sampling functions. While in any of these pages, if "STORE" is pressed, control will jump to page 5 "ready to record" automatically.

### 4.2.1 The recording threshold level

REC      press once -----> sampling page 1

The display will read:

^ THRESHOLD	SAMPLING PAGE 1
-------------	--------------------

The top line of the display has a peak reading meter. As the signal level at the input of the ADD-drive increases, the meter bar will extend to the right. If the bar extends all the way to the right (to the "S" in the word SAMPLING), the input signal has reached maximum level and has just started to distort. Notice that the response of the meter is slightly different depending on whether compression mode is ON or OFF. Encoder 1 is used to set the recording threshold level (THERSHOLD). This is the level at which recording will start. The pointer ("^") on the lower line of the display provides a visual indication of the threshold level selected. When the pointer is at the far left, recording will start immediately when you enter the record mode. In any other position, recording will only start after the modulation bar exceeds the pointer.

### 4.2.2 Sample recording parameters

>>      press -----> disk page 2

The display will read:

GAIN EMPHASIS GATE COMPRESSION SAMPLING
x5      ON      OFF      ON      PAGE 2

Various parameters are shown on the top line of the display with the corresponding parameter values being shown on the line below.

**GAIN:** Using encoder 1 input gain can be switched between two levels: x1 or x5. Use x1 for line level and x5 for microphone level.

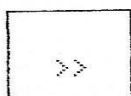
**EMPHASIS:** Preemphasis (high frequency boost) can be switched on or off.

**GATE:** Can be switched on or off. When switched on, the input signal will be completely cut off if it drops below a fixed level.

**Notice:** Gate will only work when compression is switched on. Otherwise the parameter will not be displayed. The function of the noise gate cannot be edited at a later stage.

**COMPRESSION:** It may take some practice when sampling sounds to know when to use compression and how to get the right combination of level and for a good sample. The compression mode must be switched off when recording long, non-decaying sounds like speech, music or sound effects. The compression mode must be switched on for percussive sounds with a continuous neutral decay, like drums, cymbals, percussion instruments. Compression is used to make the best possible use of the dynamic range of 8-bit sampling in the ADD-one. When playing the sound back, the ADD-one electronics expand the sounds and the full, natural dynamic range is restored.

#### 4.2.3 Sample rate and recording time



press -----> disk page 3

The display will read:

RATE	SIZE	TIME	SAMPLING
50KHZ	032K	0,656 seconds	PAGE 3

The sample rate can be switched between 50 kHz and 25 kHz using encoder 1. The size of the memory for a sound to be recorded is adjustable in 1k byte increments by turning the encoder under "SIZE", or in 50 k byte increments using the encoder under "TIME". The maximum size is limited by the available unused memory.

Each new sound that is recorded requires an integer multiple of 32k bytes of memory, even if the sound length is less than 32k bytes. With 768 k bytes of available RAM, this means that a maximum of 24 newly recorded sounds may be stored at one time. Each new sample also requires a small amount of memory (approx. 1k byte) for its header information (name, length, sample rate, etc.). If a sample size of 32 k byte is selected, the amount of memory required by the header will cause the sound to go into the next 32k byte block and thus take up 64 k byte of memory. Therefore it will save a considerable amount of memory if you set the size of a sound 1k byte smaller than an integer multiple of 32..., e.g. to 31k byte and not 32k byte. If 24 sounds are recorded and each one is less than 31k bytes, more memory may be available later when saving the sounds to disk and then reloading them. The "save all data" process packs the sounds in a compact manner on disk by combining residual unused memory to form a new block.

The "TIME" display indicates the sample time of the next sample to be recorded and is based on the size of the memory block (sound duration) and the sample rate.

## 4.2.4 Multi-samples

>>
 press -----> disk page 4

The display will read:

AVAILANLE SAMPLE RAM = 767K MULTI-SAMPLES: 1	SAMPLING PAGE 4
---	--------------------

The top line shows the amount of memory available for recording new sounds or loading individual sounds from disk. The bottom line shows the number of samples that will make up the next sound recorded. If this number is greater than one, the next samples recorded will consecutively become part of a "multi-sample". A multi-sample may be composed of up to 8 different samples, of which only one sample plays at a time. The sample which is played is chosen by the dynamic trigger level. When the multi-sample number is set to any number other than 1, each sample that is recorded afterwards is automatically assigned to the same sound until all samples have been recorded. The whole multi-sample can only be heard via a pad on channel 1 after sample has been recorded.

The multi-sample number will then automatically reset to one. The length of each sample in a multi-sample may be set independently. The first sample recorded, however, determines the duration, filter frequency, emphasis and sample rate for all samples. (Also refer to description of the edit pages).

A typical use of the multi-sample feature is, for example, a multi-sample made up of 3 different snare samples:

The first recording would be a snare drum hit lightly; the second sample would be recorded at medium loudness, and the last sample would be a loud drum hit. Now, as the drum pad is hit to play the sound back, the sample that plays is the selected by the dynamic level of the trigger input signal of the relevant sample. So, a different sample will play depending on how hard the pad is hit, giving the realism of playing a real snare drum.

## 4.2.5 Prepare to record

>>
 press -----> disk page 5

The display will read:

TO BEGIN SAMPLING 1/1 AT THE THRESHOLD LEVEL, PRESS "YES"	SAMPLING PAGE 5
--	--------------------

The numbers displayed (1/1, 2/8, etc.) show the current sample to be recorded and the number of samples contained in a multi-sample. The first number will automatically increment after each recording. Normally, the display will read "1/1" if no multi-sample is recorded. The unit is activated by pressing "YES" and the display will show:



READY TO RECORD...LEDs will light when threshold is reached. Push HELP to abort

The display will remain throughout the recording. When the threshold level has been reached and sampling actually starts, all 8 trigger LED's on the ADD-one will remain lit until the sample is complete. If the "HELP" key is pressed before the input signal reaches the threshold level, the recording process will be aborted. If it is a normal sample or the last sample of a multi-sample, the new sound will automatically be assigned to channel 1 and given the name "NEW XXX NEW SAMPLE". "XXX" is the lowest unused number of all samples beginning with the family name "NEW".

### 4.3 Sample editing

Pressing th "REC." key twice will provide access to the sample edit mode. Press ">>" or "<<" to select the various pages. Note: When editing a sound, it is very helpful to assign the sound to be processed to an output channel of the ADD-one so that all changes can be heard as they are made. It is recommended to press "STORE/YES" each time you change page. Before leaving the edit page, it is important to store all changes otherwise they will be lost.

#### 4.3.1 Select sound

REC

press twice -----> edit page 1

The display will read for example:

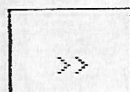
SELECT SOUND TO EDIT:	EDIT
NEW 001 NEW SAMPLE	PAGE 1

Turn the first encoder counter-clockwise to select the sound in RAM to edit. Sound names are arranged in the order that they were loaded into the memory. If the selected sound is a multi-sample, the display will show the number of samples and the samples currently selected for editing sample as follows: In the following display example, the number of samples in the sound is 5 and the sample selected for editing is 3.

SELECT SOUND TO EDIT:	EDIT
NEW 002 M-SAMPLE-	3/5 PAGE 1

Encoder 7 is used to select the sample. This selection is only relevant on edit page 3 since here start, stop, loop points as well as the "Variable Start Amount = VSA" can be edited for each sample whereas all other parameters, such as sound name, sample frequency, etc. apply to all samples in the multi-sample.

## 4.3.2 Edit sound name



press -----&gt; edit page 2

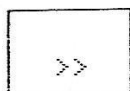
The display will read:

SOUND NAME:	NEW 001	NEW SAMPLE	EDIT
CHAR. Cursor	^^^		PAGE 2

to alter the sound name, use encoder 3 (to move the cursor) and encoder 1 (to select character).

The selected character will blink and be underlined by a pointer (^). All changes should be saved immediately by pressing "STORE". To avoid names already used in the DYNACORD sound library, it is recommended to use lower-case letters for the family name of your own samples.

## 4.3.3 Changing the sound address in memory (start-end-loop)



press -----&gt; edit page 3

The display will read:

START	END	LOOP	VARISTART	EDIT
00000	016384	016384	00	Page 3

This page allows editing the START, END and LOOP addresses of the selected sound as well as the variable start amount (or VARISTART or VSA for short). All addresses are shown relative to the original start address of the sound. The encoders below START, END and LOOP may be used to increment or decrement the addresses in steps of 1 or 500. If the LOOP address is equal to the END address, the sound will not loop. If these two values differ, the sound will be played through completely and loop between the loop point and the end point until the volume envelope for the sound has reached zero. "VARISTART" is used to control the start point of the sound according to the dynamic level of the pad trigger. If a positive VSA is selected, as the dynamic level constantly increases, the start address will move up towards the end address as far as selected maximum of  $(256 * VSA)$ . If the VSA is negative, the start point will move backwards. If this parameter is altered, the start address will change automatically to prevent the start point ever going past the original start address. While the sound is being edited, it may be played back at any time to hear the changes as they are being made.

These parameters are presented in the figure below:

The start, end and loop points are automatically defined when recording starts. (See pointer on line A). When editing, it will be noticed, for example, that a delay is to be heard between the point at which the pad is hit and the start of the acoustic sound. The start point is therefore shifted forward a little.

(Start pointer on line B). At the end, the sound is to be sustained a little. The end and loop points are therefore set in such a way that a piece of the recording is constantly repeated without crackle (area between end and loop). Now, when the pad is hit harder, the sample is to sound sharper. Therefore, a negative VSA is selected so that the sound range of the attack noise is faded in at full pad trigger level.

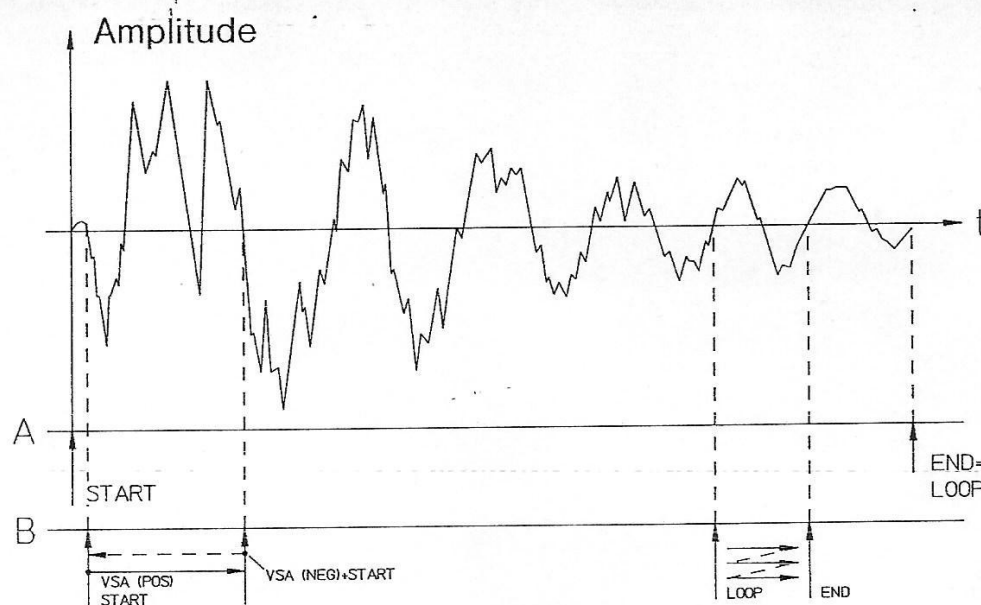
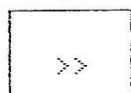


FIG. Editing start, loop, end and VSA

#### 4.3.4 Changing sound parameters



press -----> edit page 4

The display show the sound parameters:

RATE	FILTER	EMPHASIS	GATE	REL.EDIT
104	128	ON	028	075 PAGE 4

All parameters are basic settings and later no longer appear in the ADD-one or are assigned the value "00".

**RATE:** is a number defining the initial sample rate and thus defines pitch. 128 corresponds, for example, to a sample rate of 50 kHz and 104 corresponds to 25 kHz. Maximum pitch is reached at the value 128.

**FILTER:** is the initial cutoff frequency of the ADD-one low pass filter. This parameter should normally be set equal to the sample rate. Higher numbers indicate a higher cutoff frequency.

**EMPHASIS:** refers to the high frequency de-emphasis in the ADD-one output channel and can be switched on or off. It normally suppresses the noise produced in digital sound editing. However, you can also raise the pitch of a sound by recording with preemphasis on and playing the sound back without de-emphasis.

**GATE:** refers to the length of time that the volume envelope will remain open before starting to decay.

**REL:** (= release) refers to the decay time of the sound with the value 255 corresponding to longest duration.  
In the case of dynamic sounds, such as drums, a fixed gate time of 028 is recommended. Where sustained sounds are recorded without compression, the gate time should be as long as the record time and the release time kept very short.

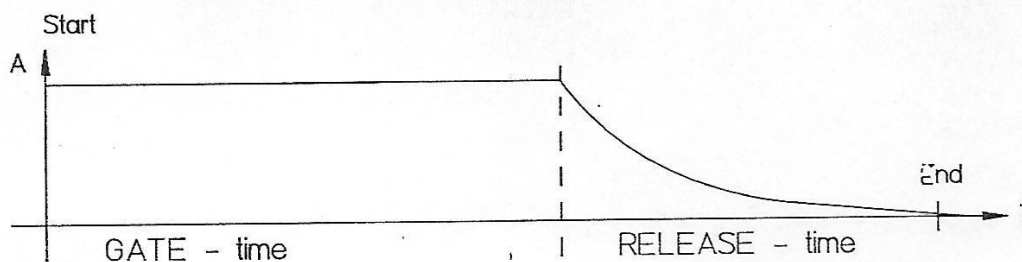
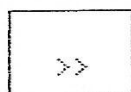


Figure to demonstrate GATE and RELEASE.  
Press "STORE" to save changes.

#### 4.3.5 Setting dynamic thresholds for multi-samples



press -----> edit page 5

This page will not appear unless the sound selected is a multi-sample. The display shows the adjustable dynamic thresholds for selecting samples:

```
MULTI 2  3  4  5  6  (7)  8  EDIT
DYN: 032 064 096 128 160 192 224 Page 5
```

The number of dynamic thresholds (= DYN) capable of being edited is governed by the number of samples in a multi-sample. The first sample is not shown because its lower dynamic threshold is always equal to zero. The sample number currently selected for editing is highlighted with parentheses on the top line of the display. The encoder below each dynamic threshold value is used to edit that value. Notice that the range of each value is only between the next lower and the next higher values and is always an even multiple of 4.

#### Saving edit pages:

After any parameter has been edited, the "STORE" key must be pressed to save the changes. If "STORE" is pressed one time, or any attempt is made to exit from the edit pages, the display will read:

```
PRESS "YES" TO SAVE EDITRD SOUND DATA
PRESS ANY OTHER KEY TO EXIT
```



Press "YES" to save all changes. If any other key is pressed, the ADD-one will leave the edit pages with all changes being lost and the sound returned to its original state.

#### 4.4 Erasing sounds

##### 4.4.1 Erasing an individual sound

REC      press 3 times ----->    erase page 1

The display will read:

PRESS "YES" TO ERASE SOUND. (024K) ERASE  
ERASE SOUND: NEW 001 NEW SAMPLE PAGE 1

Encoders 1 to 4 are used to select the sound to be erased. The length of the sample is displayed in parentheses on the top line. Press "YES" to erase the selected sound from sample memory. Note: If the selected sound was the last one recorded, or the only sound in memory, erasure will take less than a second; however, if the sound to be erased is near the beginning of memory with several others following it, erasure may take from several seconds to more than a minute as data is rearranged in memory. If the sample to be erased has been assigned to any ADD-one programs, the following warning will be displayed:

WARNING! SOUND IS USED IN PROGRAM(S):  
017      PRESS "YES" AGAIN TO ERASE.

Turn the first encoder to view any other program number that may also use the same sound. Press "YES" to erase the sound. Press any other key to cancel the erase command.

##### 4.4.2 Erasure of all samples in memory

>>      press ----->    erase page 2

PRESS "YES" TO ERASE ALL      ERASE  
SAMPLES IN RAM.                  PAGE 2

To erase all of sample memory, press "YES". The display will show the following warning:

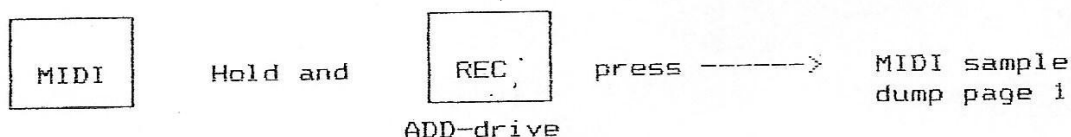
THIS FUNCTION WILL ERASE ALL SAMPLE RAM  
IF YOU ARE SURE, PRESS "YES"

Press "YES" again and RAM will be erased within 2 seconds.

## 4.5 MIDI sample dump

The MIDI sample dump pages (sequential output of MIDI data) are accessed by pressing and holding the "MIDI" key on the ADD-one and then pressing the "REC." key on the ADD-drive (and then releasing both keys). Use the cursor keys (<<, >>) to alternate between pages.

MIDI has a universal sample dump communication protocol to transfer sample data between two sampler devices. Connection between the two machines may be via a single MIDI cable, connected from the MIDI OUT jack of the transmitting machine to the MIDI IN jack of the receiving machine. However, it is preferable to use two MIDI cables between both MIDI OUT and MIDI IN on both machines to utilise the benefits of faster "handshaking". This operating mode is also known as "closed loop" communication, with the receiving machine immediately informing the transmitting machine after each data block transfer that the data block has been processed and the next block can be transmitted.

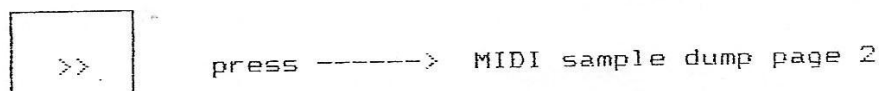


The display will read:

```
SELECT MIDI SAMPLE DUMP TYPE:
UNIVERSAL
```

Some samplers, such as the AKAI S 900 use an obsolete version of the MIDI sample dump standard which is no longer compatible with the new standard. The ADD-one may use both versions. Turn the encoder below the word "UNIVERSAL" to select the type of sound dump format to use. The options are "UNIVERSAL" (= new) and "AKAI" (= old). The default at power-on is always the new version.

CAUTION: When transferring sounds to or from the AKAI S 900, the "closed loop" MIDI connection must be used (2 MIDI cables).



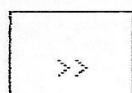
This page enables the transmission of MIDI sample data:

```
SEND SOUND 00001 VIA MIDI: (PRESS "YES")
NEW 001 NEW SAMPLE          MODE:NORMAL
```

Turn the first encoder to select the sound sample to be transmitted. (Normally, only the names of the sounds stored in RAM are displayed. It is also possible to select sounds in the basic EPROM set by pressing the "HELP" key is pressed, sounds in the BASIC SET in the ADD-one may be sent via MIDI.)

Encoder 8 is used to select the transmit mode NORMAL or COMPRESSED. NORMAL mode will transmit be the sound in 14 bit format using the duration envelope of the sound to expand the dynamic range to that which is normally heard when playing the sound on the ADD-one. The COMPRESSED mode will send the data in compressed 8-bit sound format. Press "YES" to begin transmitting which can only be aborted by pressing "GO". The receiving machine may also cause the transmission to be aborted if it does not have enough free memory for the sound.

#### 4.6 Receiving Midi sound data



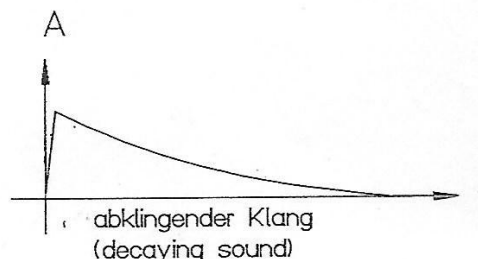
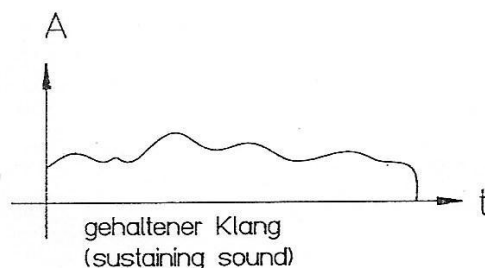
press ———> MIDI sample dump page 3

The display will read:

REQUEST MIDI SOUND DUMP: (PRESS "YES")  
 SAMPLE #00001 SOUND TYPE: SUSTAINING

Use the 3rd and 4th encoders to select a sound number. (This number has no relation to any number in the ADD-one; it is only a reference number to the transmitting machine to indicate the number of the desired sample.)

Encoder 8 is used to select the MIDI dump receive mode. There are two different modes for different types of sounds: "SUSTAINING" and "DECAYING". The SUSTAIN mode is used for receiving sounds that are sustained, i.e. not decay in their time envelope, such as speech or music recordings.



The sustain mode can be used with either one or with two MIDI cables (closed loop).

The decay mode is used for sounds with a natural decay, i.e. instruments which are hit such as drum, cymbals and percussion. This mode will perform several mathematical calculations on the incoming MIDI data in order to digitally simulate the auto compression mode that is used when sampling a sound with the ADD-drive.

CAUTION: The decay mode only allows transmission with two MIDI cables.

This is because the calculations take more time as it is available for transmission with one MIDI cable. This is why the transmitting machine would send data before the last data block in the ADD-one has been processed.

The default mode upon power-on is always SUSTAINING. In either mode, when "YES" is pressed, the sound number will first be transmitted. If another machine is properly connected to the ADD-one, it will automatically go into the transmit mode and file the sound data in the ADD-one memory. The display will then read:

INCOMING MIDI SAMPLE DUMP IN PROGRESS-  
 BUSY:RECEIVING      PRESS "GO" TO CANCEL

This display may appear any time when MIDI sample data are received. This will be the case even if the ADD-one is, for example, in the playback mode, since this display will always be initialised by a remote machine. The new sample will be stored as "NEW xxx NEW SAMPLE" and assigned to output channel 1 when transfer is complete.

If there is not enough memory, an error message will be displayed. The sample dump may be terminated by pressing "GO".

If the other machine in a the closed-loop mode does not respond, the ADD-one display will not change from the "Request MIDI sound dump" page.

CAUTION: The MIDI sample dump standard does not contain all Information about the sound. Only start, end and loop addresses, sample rates and the actual sound are transmitted digitally.

The parameters: EMPHASIS, SUSTAIN and RELEASE must therefore be corrected by means of the edit pages (see Section 2.3)!

## 5. Description of errors

Error: ADD-one does not respond when "DISK" and "REC." are pressed on the ADD-drive.

Cause: Poor connection between the two machines. Turn both machines off, check the cable plug connections. Then switch the ADD-one on first followed by the ADD-drive.

Error: Humming or whistling noises in samples just recorded.

Cause: Chassis loops, e.g. the connection: mixer - drive - ADD-one - mixer.  
 Unplug all cables from the ADD-one outputs and only work with headphones while recording.

Error: The display shows "Error: No disk in drive"

Cause: There is no disk in the drive or the drive is faulty.

Error: "Error: Disk is write protectd"

Cause: It is not possible to save to disk because the write protection on the left-hand side of the disk is enabled.  
 The square opening must be closed with the shutter.



Error: "Error: CRC error on disk read operation"  
Cause: All data read from disk are tested for errors by means of redundant test patterns. (CRC = Cyclical Redundancy Check). This error is mainly caused by incorrect handling of the disk (see precautions in Section 1.2). In most cases, it is possible to rescue nearly all sounds and other data by loading them individually from disk into the ADD-one.

Error: "Error: Drive does not respond in time"  
"Error: Drive not ready"  
"Error: Data time out"  
"Error: Receiver Overrun"  
"Error: Disk speed incorrect"  
"Error: Address Error"  
Cause: These display may have several origins. Switch off both machines and check the connecting cable. Unplug the cables connected to the ADD-drive input. If both machines still show the same error after switching on, they must both be checked in a service workshop.

Error: "Error: Lost data on disk operation"  
"Error: Disk record not found"  
Cause: Incorrect disk data. If these errors only occur for one disk, this disk must be reformatted. If only older disks show this error, the drive may be maladjusted.

## 6. Specifications

Input sensitivity XLR: Min: 2.5 mVeff  
Max: 70 mVeff  
Input sensitivity, line: Min: 80 mVeff  
Max: 2 Veff  
Drive: Double sided, double density, 160 tracks 300 rpm; for 3.5 inch disks, DS, DD, 135 TPI  
Memory capacity: 1M byte unformatted  
860k bytes formatted  
Connection to ADD-one: Bidirectional, serial data transfer at 50k byte/sec.  
Max. power consumption: 20 watts  
Power supply: 220 V / 110 / 50/60 Hz  
Weight: 4.5 kg  
Dimensions: 483 x 45 x 280 mm

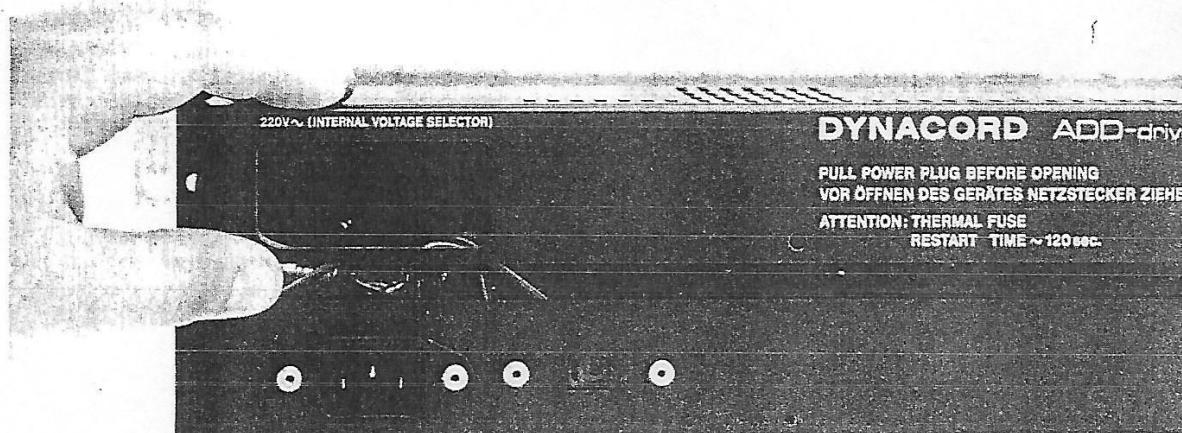
## 7. Changing the mains voltage

The ADD-drive must be opened to change the mains voltage setting. For this purpose, unscrew the cover plate and you will see on the rear panel the red voltage selector switch next to the mains connector. The settings apply the following mains voltages:

220 V = 200 V - 240 V

110 V = 100 V - 120 V

**CAUTION:** The machine is fitted with a thermal fuse which automatically deactivates at a transformer temperature of 100 °C.



DYNACORD      DEMODISK      111420

Die Demodiskette enthält drei Soundbeispiele:

DMO 001    INFINIT    42  
DMO 002    CAVALRY  
DMO 003    FLUSH

Diese Sounds erhalten Sie kostenlos. Beachten Sie bitte eventuelle Schutzrechte.

Mit der Funktion "LOAD ALL SAMPLES" (Disk Page 3) können alle Klänge in den ADD-one geladen werden. Programm 127 auf Diskette enthält ein Demo. Es kann mit der Funktion "LOAD ONE PROGRAM" (Disk Page 4) auf einen beliebigen Programmplatz im ADD-one geladen werden.

This demodisk contains three sound samples:

DMO 001    INFINIT    42  
DMO 002    CAVALRY  
DMO 003    FLUSH

You get this sound for free. Please take notice of copyrights. All sounds can be loaded with disk page 3 "LOAD ALL SAMPLES" into the ADD-one. Program 127 on disk contains a demonstration. You can load it with disk page 4 "LOAD ONE PROGRAM" to any program location in the ADD-one.

## WARTUNG UND SERVICE

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Für die Reinigung empfehlen wir ein weiches, mit Seifenwasser befeuchtetes Tuch.

DYNACORD Geräte sind Qualitätserzeugnisse. Umfangreiche Wareneingangskontrollen sorgen für eine einwandfreie Qualität der einzelnen Bauteile.

Jedes Gerät wird, bevor es das Werk verläßt, einem Dauertest über mehrere Stunden unterzogen. Auf unsere Erzeugnisse gewähren wir im Rahmen unserer allgemeinen Bedingungen eine Garantie von **24** Monaten. Die Garantieleistung erlischt im Falle eines Fremdeingriffs oder bei einem Defekt, der auf Falschanwendung zurückzuführen ist.

Im Servicefall wenden Sie sich bitte an die nächste Servicewerkstätte.

## SERVICE AND MAINTENANCE

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For cleaning purposes of this unit we recommend to use a rag moistened with soapy water only.

DYNACORD products are high-quality products. Extensive and strict inspections of all components received ensure perfect and consistent quality of all parts and final product.

Prior to leaving our factory, each unit is subjected to an endurance test for several hours. Within the scope of our general conditions of sale we are granting a warranty of **24** months on our products. This warranty does not apply to defects or damages caused by unauthorized repair or to damages due to misuse.

If the unit becomes defective, please apply to the nearest qualified service shop or to your dealer and/or importer.

## SERVICE ET PRECAUTION

---

Pour le nettoyage de l'appareil nous recommandons un chiffon doux humecté d'eau savonneuse.

Les appareils DYNACORD sont des produits de haute qualité. De nombreux contrôles de la marchandise garantissent une qualité irréprochable de chaque élément de construction.

Avant de quitter l'usine, chaque appareil est soumis à un test d'endurance de plusieurs heures. Nous accordons sur nos produits une garantie de **24** mois dans le cadre de nos conditions générales. Cette garantie n'est pas valable en cas d'intervention étrangère ou en cas de défaut résultant d'une mauvaise utilisation.

Pour le service après-vente veuillez adresser à l'atelier du service après-vente le plus proche.



---

**DYNACORD SERVICE**

HIRSCHBERGER RING 45  
8440 STRAUBING  
TEL. (09421) 706-0

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